



ODYSSEY

DEVELOPING JOURNEYS

MIZUNO HOUSE, WINNERSH

FLOOD RISK ASSESSMENT



MIZUNO HOUSE, WINNERSH

**FLOOD RISK ASSESSMENT
ON BEHALF OF SIRI GURU SINGH SABA GURDWARA**

Prepared by

Odyssey

Tuscany House

White Hart Lane

Basingstoke

Hampshire

RG21 4AF

Tel: 01256 331144

July 2025



DOCUMENT CONTROL SHEET

Project Name Mizuno House, Winnersh

Project No. 23-084

Rev	Issue Purpose	Author	Checked	Reviewed	Approved	Date
-	Initial Issue	CN	CJR	CJR	RS	August 2025



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1.0 INTRODUCTION

1.1 *General*

1.1.1 Odyssey has been commissioned by Siri Guru Singh Saba Gurdwara to undertake a Flood Risk Assessment (FRA), to be submitted in association with a planning application for a proposed development at Mizuno House, Winnersh.

1.1.2 The development proposals comprise a simple internal conversion of the existing Mizuno House into a community centre, along with a small, **single storey extension on the eastern side** of the building, and a flagpole with plinth on the north side of the site.

1.1.3 This report sets out the main flood risks to the site and those that may arise as a result of the development.

1.1.4 This report comprises the following elements:

- review of the existing topology, geology and hydrology of the site;
- summary of relevant planning policy; and,
- assessment of the existing flood risk to the site;
- mitigation measures, as appropriate, and details of access and egress.



2.0 EXISTING SITE CONDITIONS

2.1 Location

2.1.1 The 0.18 hectare (ha) site is located 200 metres (m) to the south of Winnersh Triangle train station and approximately 800m to the south of A329(M). The site is bounded by Reading Road to the north, Gazelle Close to the west and commercial properties to east, west and south. The site currently comprises a commercial building and a private car park.

2.1.2 The Ordnance Survey grid reference for the site is 477124E, 171269N and the nearest postcode is RG41 5TG. The site location plan and layout is presented in **Appendix A**.

2.2 Topography

2.2.1 Environment Agency (EA) Light Detecting and Ranging (LiDAR) data shows **the site is broadly level** with an elevation of approximately 39 metres Above Ordnance Datum (m AOD). The LiDAR contours are presented in **Appendix B**.

2.3 Geology and Hydrogeology

2.3.1 British Geological Survey (BGS) online mapping (accessed July 2025) indicates the **bedrock geology of the site comprises London Clay Formation (clay, silt, sand)**. The mapping also shows there are superficial deposits of **river terrace (sand and gravel)** across the site. The BGS data is presented in **Appendix C**.

2.3.2 BGS hydrogeological mapping shows the **site lies within 'Thames Group'** described as "*Rocks with essentially **no groundwater***" and summarised as "*Predominantly clayey sequence up to 140 m thick confining underlying aquifers. Occasional springs at base have very hard water*".

2.3.3 The site is located **550m east of the River Loddon**. There are no other watercourses in the vicinity of the site.

2.3.4 Groundwater mapping published by the EA indicates the site is **not located within a Source Protection Zone**.

2.3.5 Groundwater mapping published by the EA indicates the site is **located within a drinking water protected area. (Surface Water)**.



3.0 PLANNING POLICY

3.1 *Flood and Water Management Act (2010)*

3.1.1 The Flood and Water Management Act (FWMA) received royal assent on 8 April 2010. It was intended to implement Sir Michael Pitt's recommendations following the widespread summer floods of 2007. Guidance and information notes are published online by the Department for Environment, Food and Rural Affairs (DEFRA) to address a range of aspects concerning the Act.

3.1.2 The FWMA encourages the use of **Sustainable Drainage Systems (SuDS) on development sites by removing the automatic right to connect to sewers.**

3.2 *National Planning Policy Framework (2024)*

3.2.1 The National Planning Policy Framework (NPPF) sets out the Government's planning policies, and how these policies should be applied. Planning Practice Guidance (PPG) is available online and provides additional guidance to the NPPF, as well as providing links to relevant detailed documents. **Section 3.3** provides further detail on the PPG.

3.2.2 Paragraph 170 of the NPPF states "*inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.*"

3.2.3 Paragraph 172 of the NPPF states "*All plans should apply a **sequential, risk-based approach** to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property.*"

3.2.4 Paragraph 181 of the NPPF states "*when determining any planning applications, local planning authorities should ensure that **flood risk is not increased elsewhere**. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:*

- *within the site, the most vulnerable development is **located in areas of lowest flood risk** unless there are overriding reasons to prefer a different location;*
- *the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be **quickly brought back into use without significant refurbishment;***



- *it incorporates **sustainable drainage systems**, unless there is clear evidence that this would be inappropriate;*
- *any residual risk can be safely managed; and*
- *safe access and escape routes are included where appropriate, as part of an agreed emergency plan.”*

3.2.5 In accordance with the NPPF, a site-specific FRA is required for sites within the following categories:

- In Flood Zone 1, all proposals involving:
 - Sites of one hectare or more.
 - Land which has been identified by the EA as having critical drainage problems.
 - Land identified in the SFRA as being at increased flood risk in the future.
 - Land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.
- All proposals for development in Flood Zones 2 and 3.

3.3 Planning Practice Guidance (2022)

3.3.1 The PPG provides additional direction to the NPPF, with details provided in each section of the document on how to conform to the NPPF.

3.3.2 All land in England is classified as falling into one of three main flood zones, with the zones referring to the probability of river or sea flooding, ignoring the existence of defences. The PPG identifies and describes the EA flood zones as:

- Flood Zone 1: Low probability – land assessed as having less than a 1 in 1,000 annual probability of river or sea flooding (<0.1% Annual Exceedance Probability (AEP)).
- Flood Zone 2: Medium probability – land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% - 0.1% AEP).
- Flood Zone 3a: High probability – land assessed as having a 1 in 100 or greater annual probability of river flooding ($\geq 1\%$ AEP), or a 1 in 200 or greater annual probability of sea flooding ($\geq 0.5\%$ AEP).
- Flood Zone 3b: The Functional Floodplain – land where water has to flow or be stored in times of flood (as identified by the Local Planning Authorities in the SFRA).



3.4 Surface Water Drainage Strategy Requirements

3.4.1 The Department for Environment, Food & Rural Affairs (DEFRA) National Standards for Sustainable Drainage Systems (SuDS) was published on 19th June 2025. The standards updated the drainage hierarchy and state, “Runoff from the development shall be discharged to the following final destinations, to the maximum extent practicable, in accordance with the below hierarchy:

- Priority 1: collected for non-potable use
- Priority 2: infiltrated to the ground
- Priority 3: discharge to an above ground surface water body
- Priority 4: discharged to a surface water sewer, or another piped surface water drainage system
- Priority 5: discharge to a combined sewer”

3.4.2 The standards also provide detailed standards to which SuDS should be designed for all types and scales of developments.

3.5 Wokingham Borough Core Strategy Development Plan Document

3.5.1 An extract from Policy CP1 of the Wokingham Borough Core Strategy Development Plan Document states planning permission will be granted for development proposals that “avoid increasing (and where possible reduce) risks of or from all forms of flooding (including from groundwater.)”

3.6 Wokingham Borough Development Plan (Adopted 2014)

3.6.1 Policy CC09: Development and Flood Risk (from all sources) of the Wokingham Borough Development Plan (WBDP) states:

1. “All sources of flood risk, including historic flooding, must be taken into account at all stages and to the appropriate degree at all levels in the planning application process to avoid inappropriate development in areas at risk of flooding. Proposals must be consistent with the guidance in paragraphs 99-104 of the National Planning Policy Framework (NPPF); the Technical Guidance to the NPPF and demonstrate how they have used the Strategic Flood Risk Assessment (SFRA) to determine the suitability of the proposal.
2. Development proposals in Flood Zones 2 or 3 must take into account the vulnerability of proposed development.



3. **Development must be guided to areas of lowest flood risk** by applying the sequential approach taking into account flooding from all sources and shall ensure flood risk is not worsened for the application site and elsewhere, and ideally that betterment of existing conditions is achieved. The sequential test will not be required if at least one of the following applies:
 - a) Replacement of an existing single residential property. However, the replacement property should, where possible, be located on the part of the site at lowest risk
 - b) Conversions and change of use unless it involves a change to a more vulnerable class
 - c) Minor development, as defined in footnote 10 of the Technical Guidance Note to the NPPF.
4. In exceptional circumstances, new development in areas of flood risk will be supported where it can be demonstrated that:
 - a) The development provides wider sustainability benefits to the community that outweigh flood risk
 - b) The development will:
 - i. Be safe for its lifetime, taking account of the vulnerability of its users
 - ii. Not increase flood risk in any form elsewhere and, where possible, will reduce flood risk overall
 - iii. Incorporate flood resilient and resistant measures into the design
 - c) Appropriate evacuation and flood response procedures are in place to manage the residual risk associated with an extreme flood event.
5. Where required, suitable and appropriately detailed flood risk information will need to accompany a planning application. A Flood Risk Assessment (FRA) is required for:
 - a) All proposals in areas of known historic flooding from all sources
 - b) Where there is evidence of a risk from all sources of flooding identified in the Strategic Flood Risk Assessment
 - c) Those proposals set out in footnote 20 to paragraph 103 of the NPPF.”



3.6.2 Policy CC10: Sustainable Drainage of the WBDP states:

1. *“All development proposals must ensure surface water arising from the proposed development including taking into account climate change is managed in a sustainable manner. This must be demonstrated through*
 - a) *A Flood Risk Assessment, or*
 - b) *Through a Surface Water Drainage Strategy.*

2. *All development proposals must*
 - a) *Reproduce greenfield runoff characteristics and return run-off rates and volumes back to the original greenfield levels, for greenfield sites and for brownfield sites both run-off rates and volumes be reduced to as near greenfield as practicably possible.*
 - b) *Incorporate Sustainable Drainage Systems (SuDS), where practicable, which must be of an appropriate design to meet the long term needs of the development and which achieve wider social and environmental benefits*
 - c) *Provide clear details of proposed SuDS including the adoption arrangements and how they will be maintained to the satisfaction of the Council [as the Lead Local Flood Authority (LLFA)]*
 - d) *Not cause adverse impacts to the public sewerage network serving the development where discharging surface water to a public sewer.”*



4.0 PROPOSED DEVELOPMENT

4.1.1 The development proposals comprise a simple internal conversion of the existing Mizuno House into a community centre, along with a **small, single storey extension on the eastern side** of the building, and a flagpole with plinth on the north side of the site.

4.1.2 The proposed site layout is presented in **Appendix A**.



5.0 SOURCES OF FLOOD RISK

5.1.1 The NPPF requires flood risk from the following sources to be assessed:

- Tidal and fluvial sources (sea and river flooding);
- Pluvial sources (flooding resulting from overland flows);
- Groundwater sources;
- Sewer Flooding; and
- Artificial sources, canals, reservoirs etc.

5.1.2 Each of the sources are addressed separately below.

5.2 Fluvial Flooding

5.2.1 Fluvial flooding is caused by flows in rivers or streams exceeding the capacity of the river channel and spilling into the floodplain. Fluvial flooding can also occur on designated floodplain land after a period of heavy rainfall.

5.2.2 The EA Flood Map for Planning (accessed July 2025) shows the site is entirely located within Flood Zone 2; land assessed as having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding. The flood risk vulnerability classification of the development is 'less vulnerable', and therefore the proposed development is deemed to be appropriate in accordance with the PPG. The EA Flood Map for Planning is presented in **Appendix D**.

5.2.3 The EA has also provided their most up-to-date detailed modelling results in the vicinity of the site (the Lower Loddon Flood Map Update 2009). The results of the ESTRY-TUFLOW model confirm that the site is in Flood Zone 2. The site is only partly at risk of fluvial flooding in the 1% annual exceedance probability (AEP) +20% climate change (CC) event. The modelling results for the 5% AEP, 1% AEP, 1% AEP +20% CC, and 0.1% AEP are shown in **Figures 5.1 – 5.4**, and the site-focused results of the 1% AEP + 20% CC are shown in **Figures 5.5 and 5.6**.

5.2.4 According to the EA climate change guidance, the *Central* allowance for Loddon and tributaries river basin for the epoch 2080s is 14% which represents the design flood event for the development. The 1 in 100 year plus 14% climate change results were not part of the results issued by the EA for the Lower Loddon flood study, the model result for 20% climate change allowance have therefore been adopted for this site as the nearest scenario.



Figure 5.1: Peak Flood Depth 5% AEP

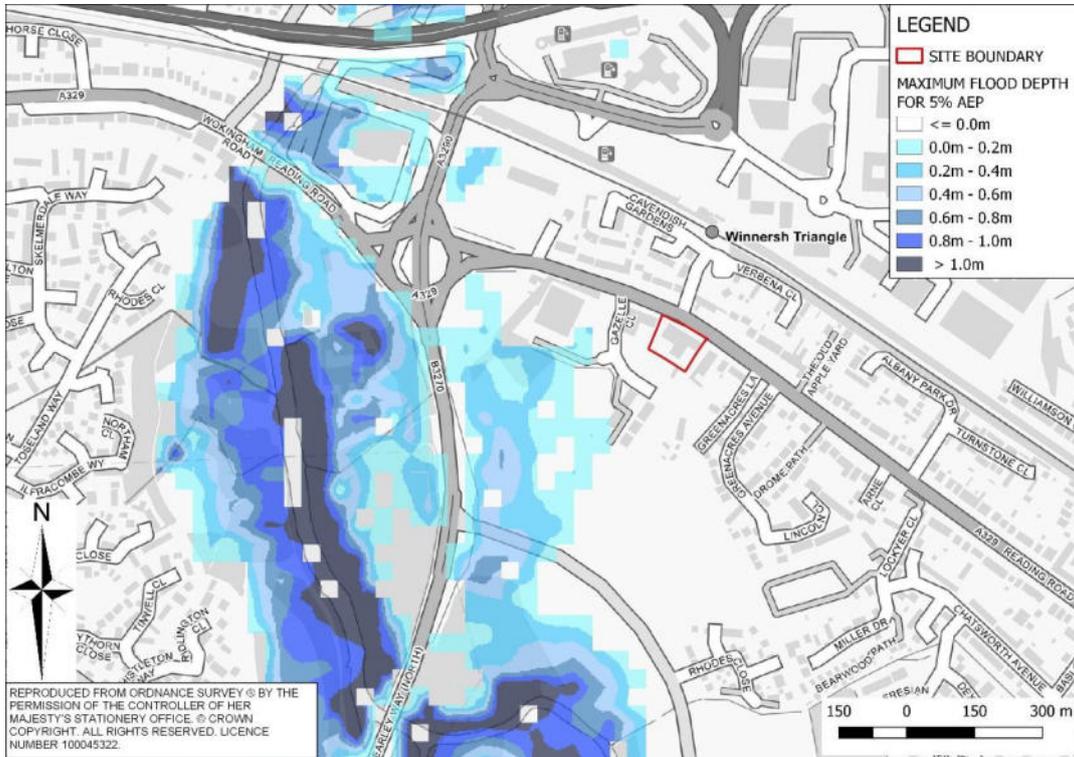


Figure 5.2: Peak Flood Depth 1% AEP

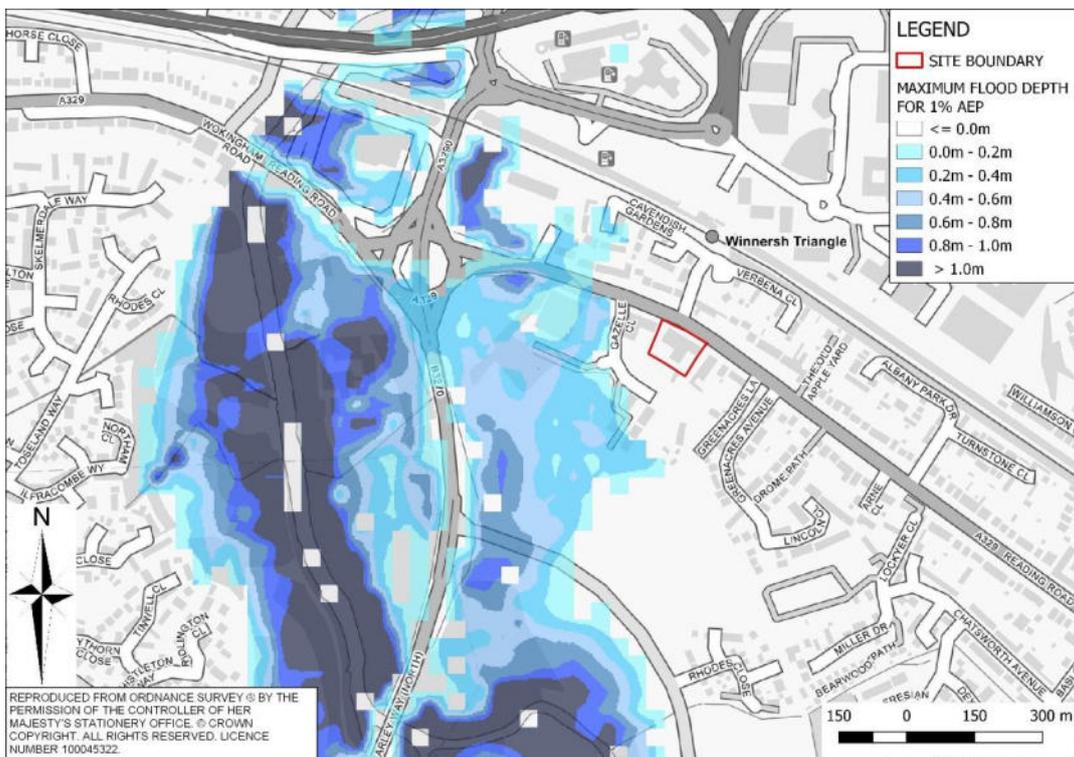




Figure 5.3: Peak Flood Depth 1% AEP + 20% CC

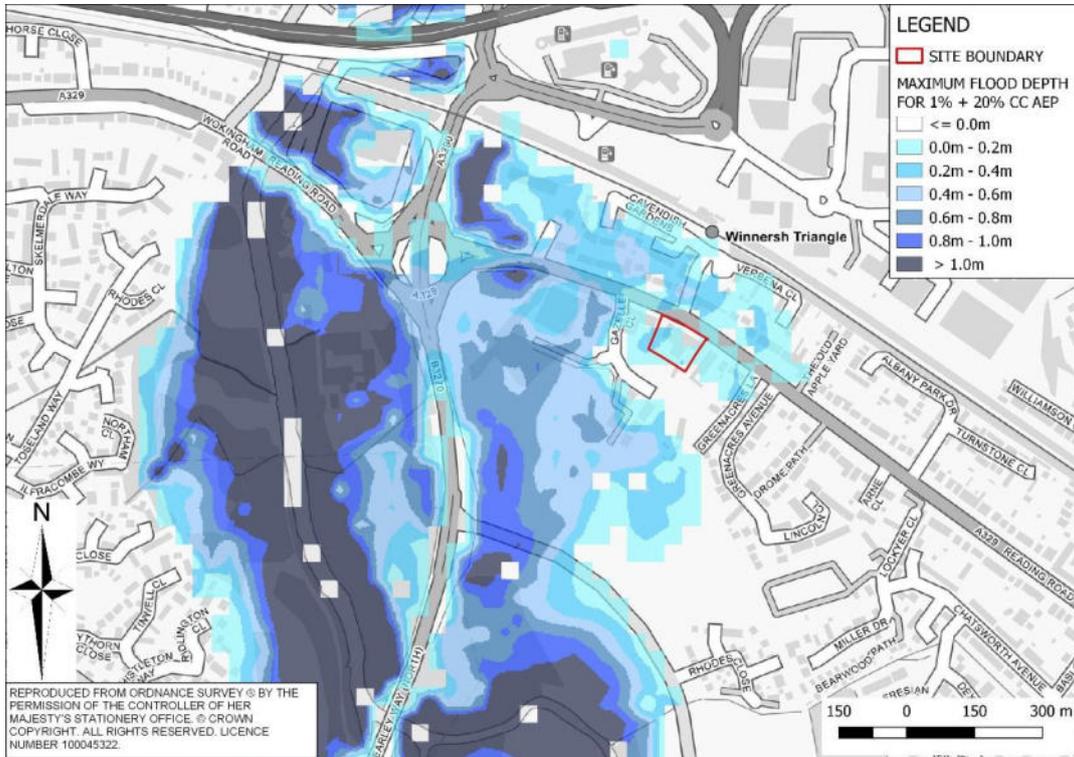


Figure 5.4: Peak Flood Depth 0.1% AEP

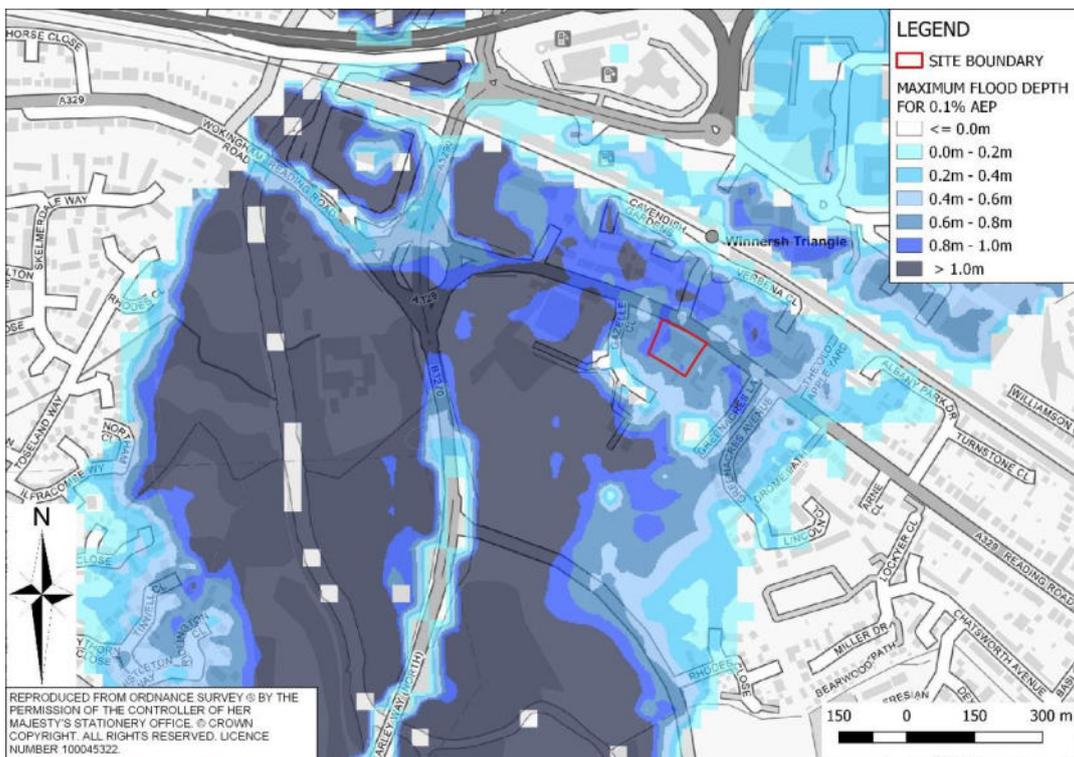




Figure 5.5: 1% AEP + 20% CC (0.2m Depths)

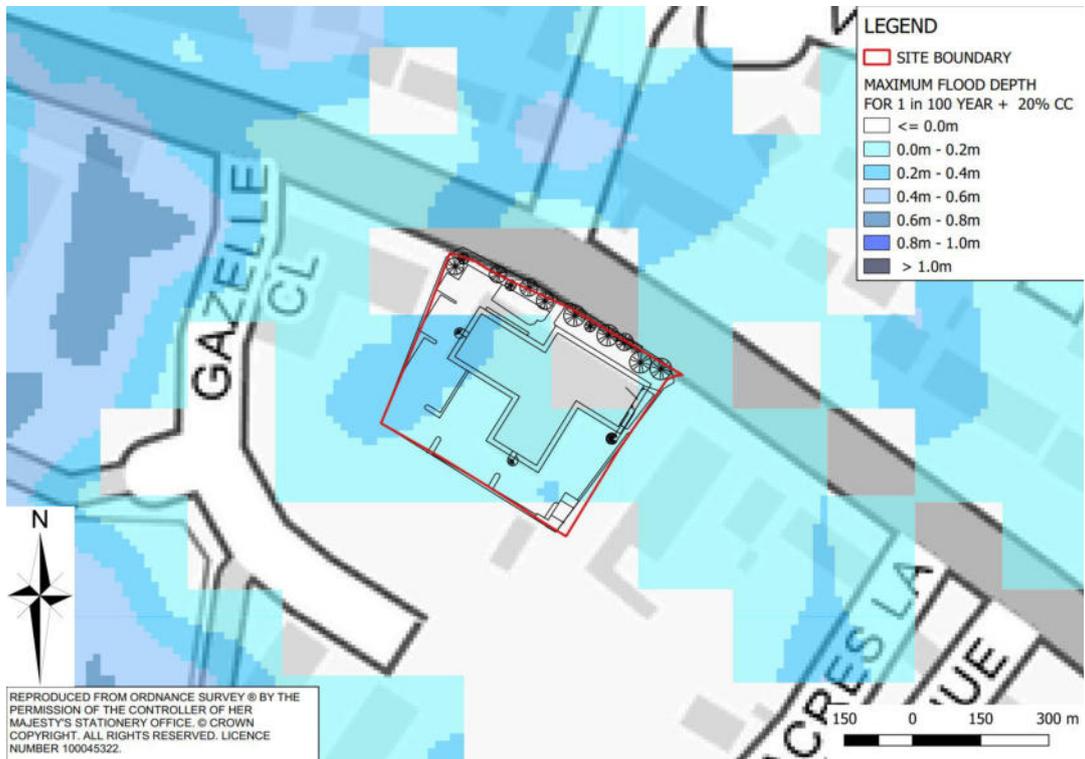
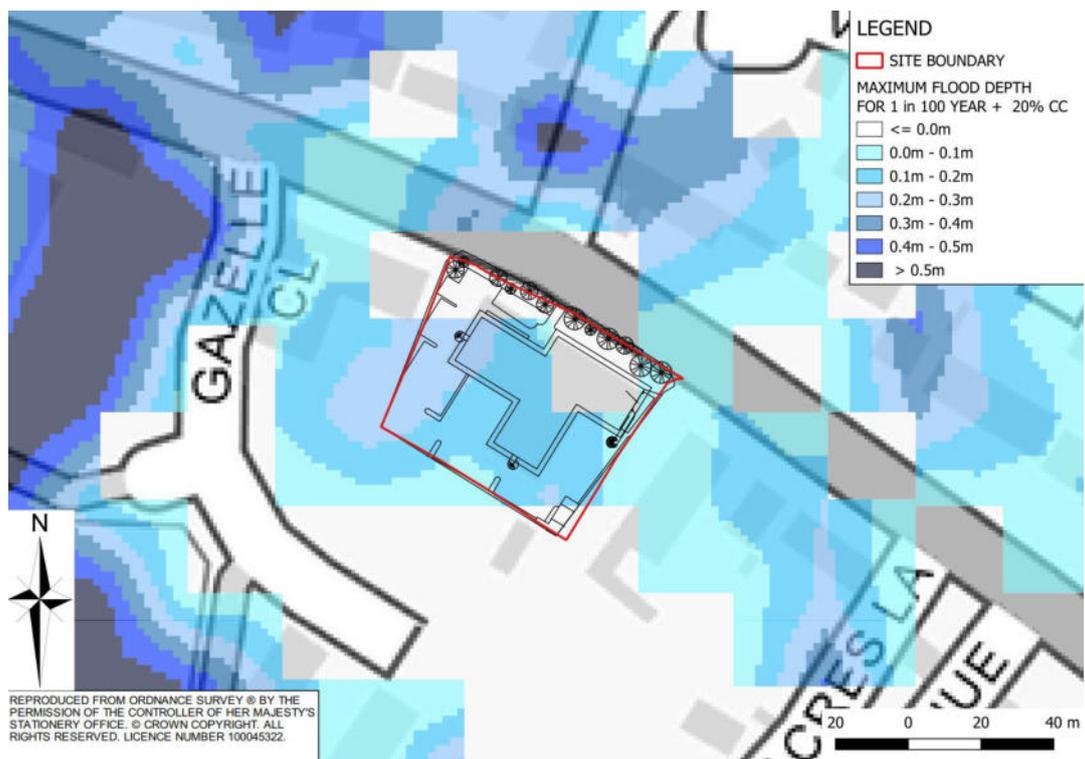


Figure 5.6: 1% AEP + 20% CC (0.1m Depths)





5.2.5 As part of the Lower Loddon Flood Modelling received from the EA, a map of historic flood events in the vicinity of the site was received, and is included in **Appendix D**. This shows that the **site was affected by flooding in 1968**. The online JBA interactive flood mapping also shows there have been **recorded fluvial flooding incidents on and around the site**.

5.2.6 As the proposed non-residential development is considered to be 'less vulnerable' provisions do not need to be made regarding finished floor levels.

5.2.7 Safe access and egress is available during the **1 in 100 year plus 20% design event** - from the site, **occupants can proceed east along the A329 Reading Road to the higher areas away from the flood plain**.

Floodplain **Volume Compensation**

5.2.8 The **proposed storage area extension is located within an area of fluvial floodplain**, on the southeast face of the building, near **the east corner of the site**. As a result of this, it is **proposed to introduce a compensatory storage area, located in the space in front of the building, which is located outside of the 1 in 100 year plus 20% climate change event flood extents**, to mitigate the loss of flood storage.

5.2.9 The total footprint of the proposed extension **within the floodplain is 18.8m²**, and the depth of existing flooding in **that area is between 0.0m and 0.1m (as demonstrated in Figure 5.6)**, therefore **the maximum volume of compensation required is 2m³**.

5.2.10 This flood compensation volume can be **provided in the area of soft landscaping situated between the northeast face of the building, and Reading Road, which is outside the current flood extents, and near to the proposed extension. This will ensure no increase to flood risk elsewhere as a consequence of the development.**

5.2.11 The proposed flagpole plinth is located in the north corner of the site outside of existing flood extents and therefore no flood compensation is required for this.



5.3 Surface Water Flooding

5.3.1 Surface water (pluvial) flooding is caused by rainfall levels exceeding the natural infiltration properties of the surrounding soils. Flooding can occur where there is a lack of a formalised drainage system, or as a result of a poorly designed or maintained sewer system. Flooding can also occur owing to the absence of a natural method of drainage such as watercourses or ditches, or where soil infiltration rates are low. Flooding often results in ponding of water at low points or when surface water flow routes are blocked by an obstruction.

5.3.2 The EA surface water mapping indicates the majority of the development area is at 'low' risk of surface water flooding. There are parts of the site that are at high and medium risk of flooding which can be found to the northwest and southeast along the site boundary. The extension of the existing building is proposed in an area of low and medium risk of surface water flooding. The EA Risk of Surface Water Flooding mapping is presented in **Appendix D**.

5.4 Groundwater Flooding

5.4.1 Groundwater flooding is caused by the emergence of water originating from sub-surface permeable strata. A groundwater flood event results from a rise in groundwater level sufficient for the water table to intersect the ground surface and inundate low lying land. Periods of prolonged rainfall may also be a cause of groundwater flooding, with aquifers and soils becoming saturated.

5.4.2 The BGS Susceptibility to Groundwater Flooding map presented in the Wokingham Borough Council (WBC) Strategic Flood Risk Assessment (SFRA) identifies the site as "*not considered to be prone to groundwater flooding*". The Susceptibility to Groundwater Flooding map is presented in **Appendix D**.

5.4.3 The SFRA historical flooding map does not show any historical groundwater flooding events near the site.

5.5 Sewer Flooding

5.5.1 Sewer flooding can occur owing to the failure of existing foul or surface water drainage infrastructure. If flows within the drainage system exceed the designed capacity or foreign matter causes blockages, overflow to the surface can occur, leading to flooding.

5.5.2 The WBC SFRA historical flooding map does not show any record of sewer flooding nearby. The SFRA states that records of flooding are not available for any privately owned sewers unless they have been reported as flooding incidents to the Council.



5.6 Flooding from Artificial Sources

5.6.1 Failure and overtopping of reservoirs and navigable water bodies, and failure of water mains, constitute the primary means of flooding from artificial sources.

5.6.2 The EA's Flood Risk from Reservoirs mapping indicates the **site is not at risk of flooding from reservoirs when water levels are normal. The site is at risk of flooding from reservoirs when there is also flooding from rivers.** The EA Flood Risk from Reservoirs mapping is presented in **Appendix D.**



6.0 SEQUENTIAL AND EXCEPTION TESTS

6.1 *The Sequential Test*

6.1.1 The EA's flood zones are the starting point for the Sequential approach promoted by the NPPF, and are shown on the EA flood mapping. The PPG identifies that the overall aim of the Sequential Test is to steer new developments to Flood Zone 1.

6.1.2 As stated by the NPPF, development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with lower probability of flooding. The SFRA will provide the basis for applying this test.

6.1.3 Following application of the Sequential Test, if it is not possible for the development to be located in zones with lower probability of flooding (Flood Zone 1), proposed sites should take into account the flood risk vulnerability of land uses (Table 2, PPG) and consider reasonable sites in Flood Zone 2, and apply the Exception Test if required (Table 3, PPG). Only where there are no reasonably available sites in Flood Zone 1 and Flood Zone 2 should the suitability of sites in Flood Zone 3 be considered, taking into account the flood risk vulnerability of land uses and applying the Exception Test if required.

6.1.4 The whole of the development site is in Flood Zone 2, however, the development is allocated as "less vulnerable", therefore a sequential test is not required. The development is also a small non-domestic extension with a footprint of less than 250m², which is also exemption criteria.

6.2 *The Exception Test*

6.2.1 For the Exception Test to be passed, it should be demonstrated:

- the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a SFRA;
- the development should be on developable brownfield land or, if not, it must be demonstrated that there is no such alternative land available; and
- the development will be safe for its lifetime taking into account the vulnerability of its users, without increasing flood risk elsewhere, and where possible, reducing flood risk overall.

6.2.2 The whole of the development site is in Flood Zone 2, however, the development is allocated as 'less vulnerable', therefore an exception test is not required.



7.0 SUMMARY AND CONCLUSIONS

7.1.1 Odyssey has been commissioned by Siri Guru Singh Saba Gurdwara to undertake a Flood Risk Assessment (FRA), to be submitted in association with a planning application for a proposed development at Mizuno House, Winnersh.

7.1.2 The development is for a simple internal conversion, along with a small, **single storey extension on the eastern side of the building** and a flagpole with plinth in the north of the site.

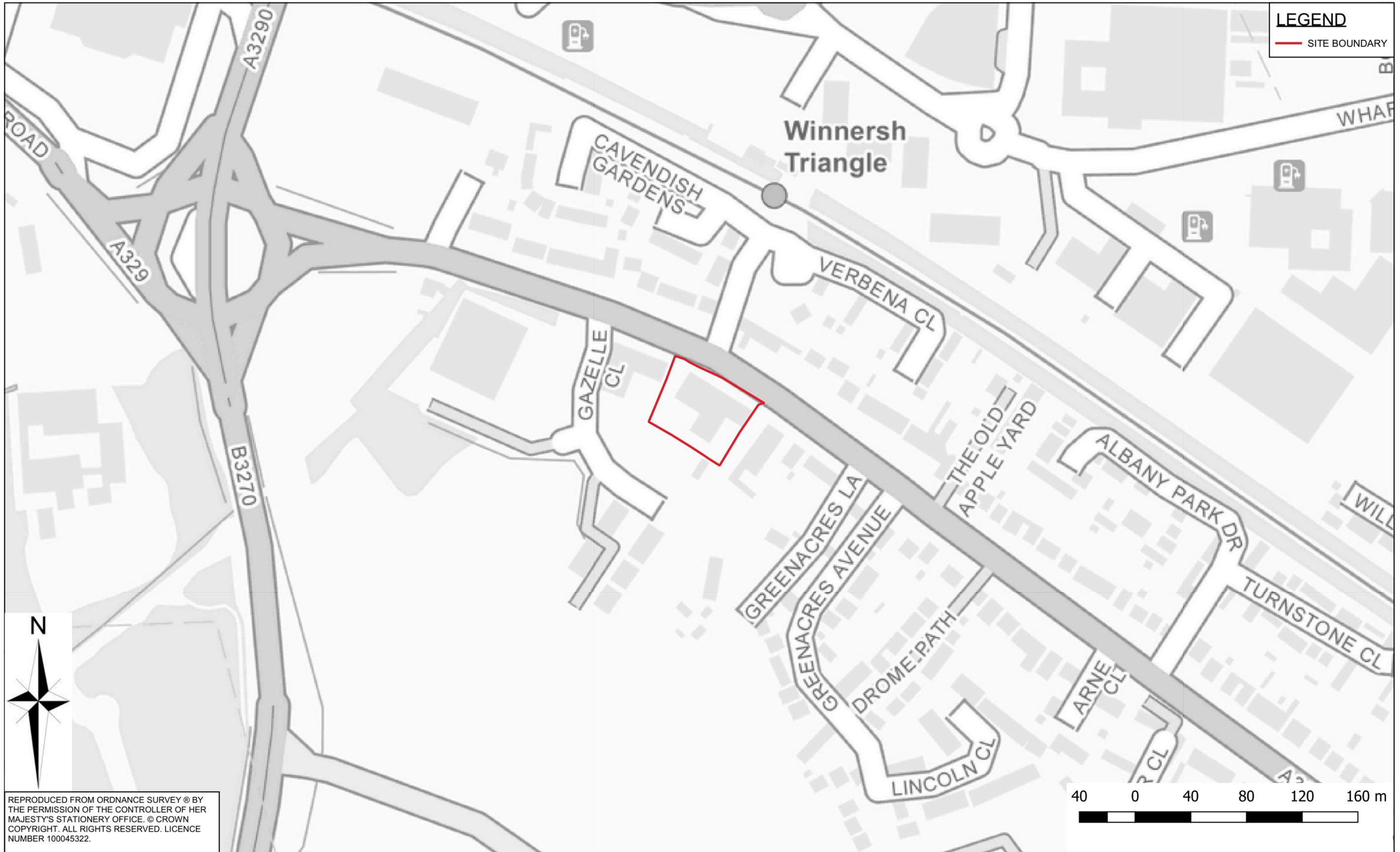
7.1.3 The site lies within Flood Zone 2 and EA records indicate the site has been affected by flooding previously. **The majority of the site is at low risk of surface water flooding**, with some **small areas at medium and high risk**. Groundwater flood mapping indicates the site is **not considered to be prone to groundwater flooding**. The site is **not at risk of flooding from reservoirs** when water levels are normal but is considered at risk of flooding from reservoirs when there is also flooding from rivers. There are no records of historic sewer flooding near the site.

7.1.4 The proposed single-story **extension is located within the design fluvial flood extents, so a small volume of compensation will be provided in the area at the front of the building. As a result, the development will not increase flood risk elsewhere.**

7.1.5 This FRA demonstrates the **proposals are consistent with the aims of the NPPF and its PPG, along with the aims of local policy. The development would not be at significant risk of flooding, nor would it exacerbate flood risks to offsite.**

APPENDIX A

Site Location Plan and Layout



LEGEND
— SITE BOUNDARY

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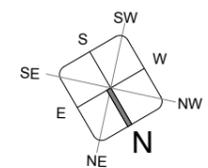
Tuscany House
 White Hart Lane
 Basingstoke
 Hampshire RG21 4AF

Telephone: 01256 331144
 Fax: 01256 331134
 E: enquiries@odysseyconsult.co.uk
 W: www.odysseyconsult.co.uk

Job Title	MIZUNO HOUSE, WINNERSH
Figure Title	SITE LOCATION PLAN

Client	SIRI GURU SINGH SABA GURDWARA
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Drawn	CN	Checked	GG	Approved	GG
Job No	23-084	Figure No	FIGURE 001	Rev	

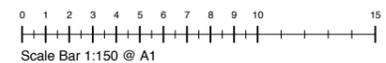


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-  All existing trees and planting retained
-  Proposed new skylights
-  Proposed flagpole
-  Proposed building signage
-  Proposed new fence

NOTE:

Refer to PL-AL(31)03 and PL-AL(31)02 Proposed External Elevations

Revisions:	
Rev A 13.09.24 OL	Dormer roof omitted, new rooflights added, new fence and gate added

Status PRE PLANNING PERMISSION



Glasgow: 0141 221 8229
Querra House, 29 St Vincent Place
Glasgow, G1 2BT

London: 0203 011 1984
Henry Wood House, 2 Riding House St
London, W1W 7FA

c2:concepts
Concepts, creative.
www.c2concepts.co.uk

Project	Mizuno House Gurdwara Reading						
Client	Hubbl						
Title	Proposed Site Plan						
Drawn	MM	Checked	DK	Date	13.05.24		
Scale	1:100 @ A1	Project no.	c2:1060	Drawing no.	PL-AL(27)EX.01	Rev.	A



Proposed Roof Plan
Scale 1:150 @ A1

APPENDIX B

Light Detecting and Ranging Contours Map

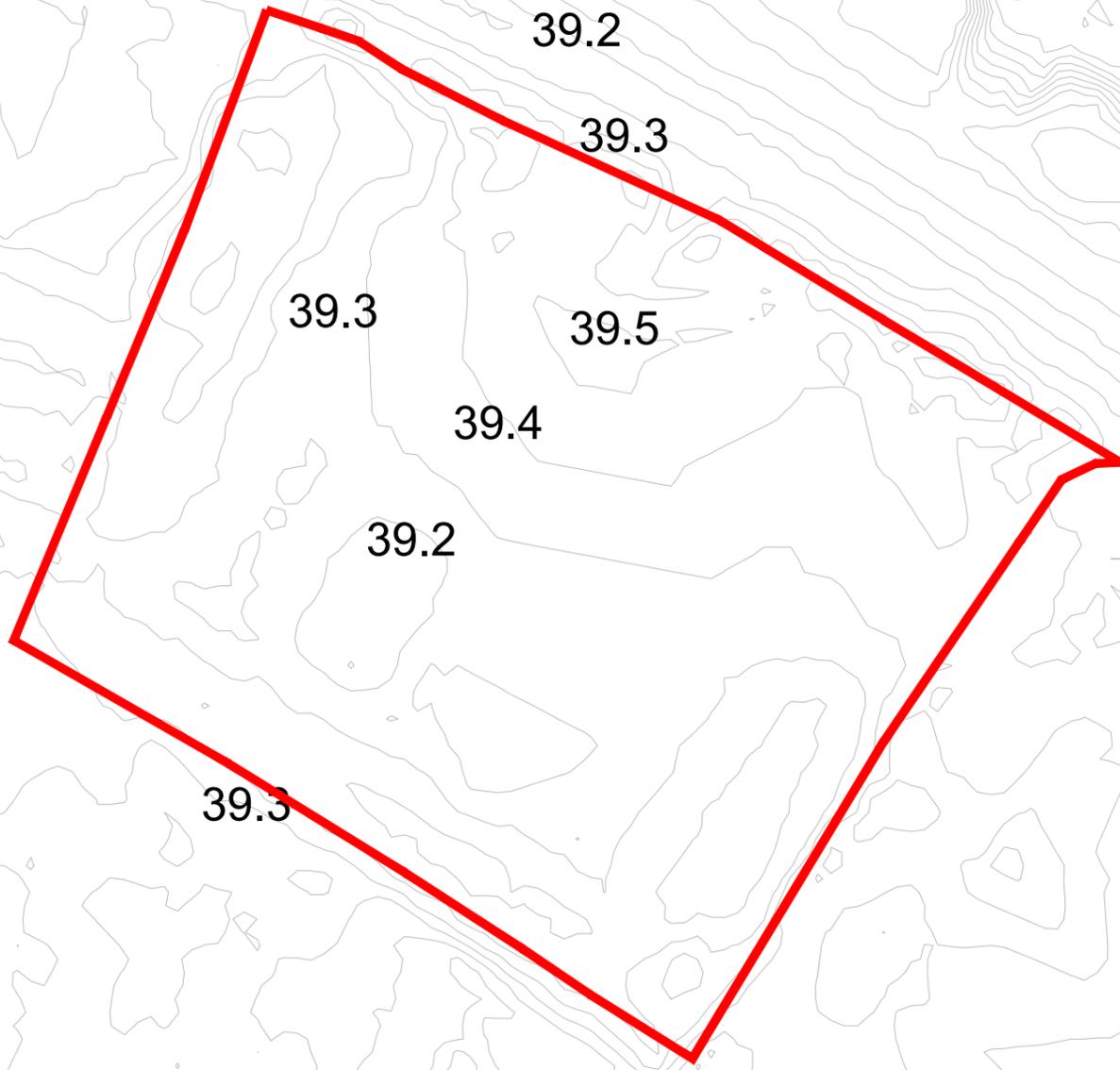


LEGEND:



PROPOSED SITE BOUNDARY

0.1m CONTOUR



P:\23-084 - Mizuno House, Winnersh\Tech\Acad\Drawings\23-084-001 LIDAR contour map.dwg

Rev	Amendments	Drn	Chk	App	Date

ODYSSEY

Tuscany House
White Hart Lane
Basingstoke
Hampshire RG21 4AF

Telephone: 01256 331144
Fax: 01256 331134
E: enquiries@odysseyconsult.co.uk
W: www.odysseyconsult.co.uk

Job Title	MIZUNO HOUSE, WINNERSH
Drawing Title	LIDAR CONTOUR MAP

Client	SIRI GURU SINGH SABA GURDWARA
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Scale	1:500 @A3	Date	APR 23	Designed	SZ
Drawn	SZ	Checked	NA	Approved	GG
Job No	23-084	Drawing No	23-084-001	Rev	

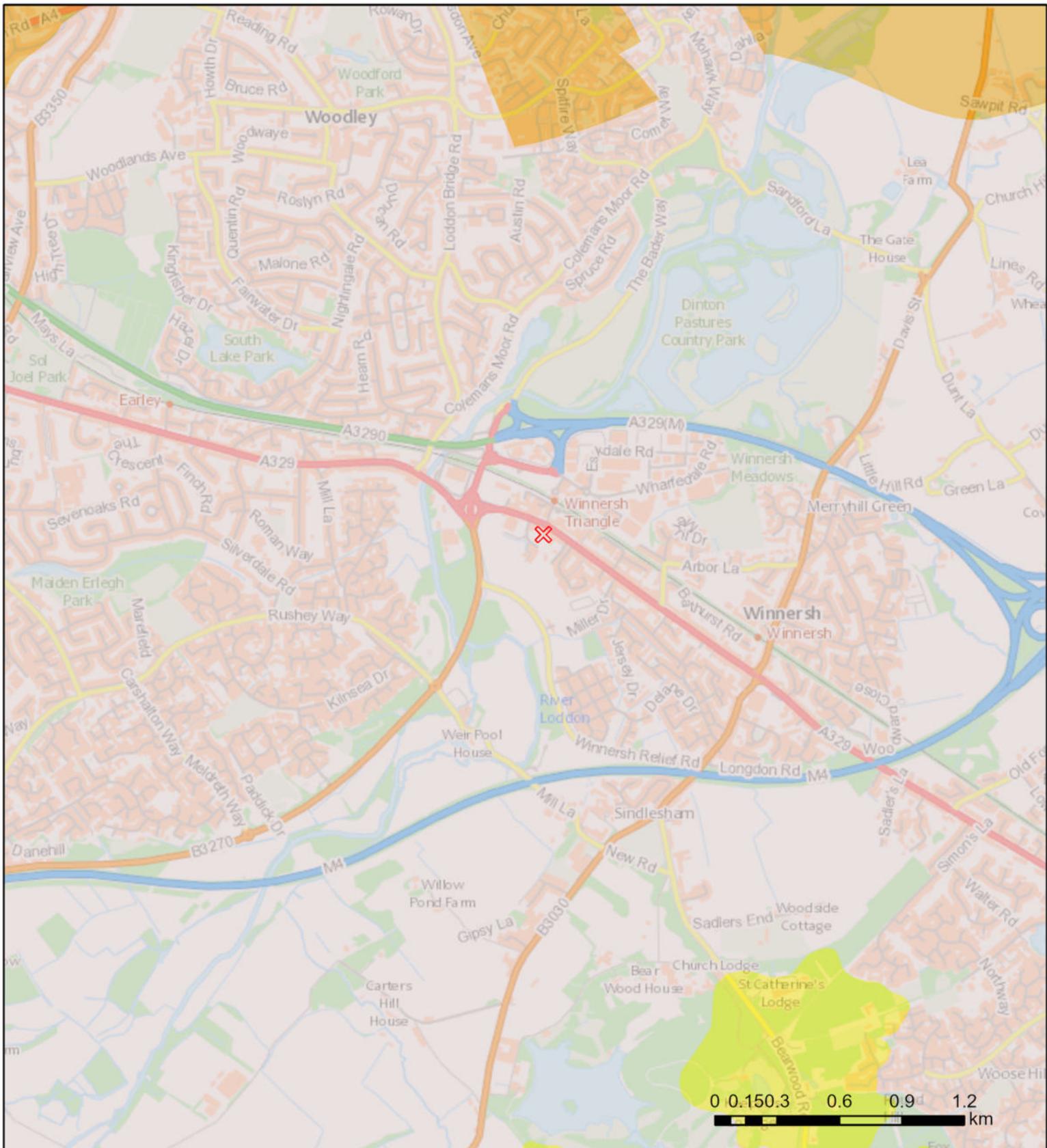
APPENDIX C

British Geological Survey Data

Bedrock Geology



British Geological Survey



Contains OS data © Crown Copyright and database right 2020

GeolIndex Onshore Data Sources: NERC, Natural England, English Heritage and Ordnance Survey

Map Key

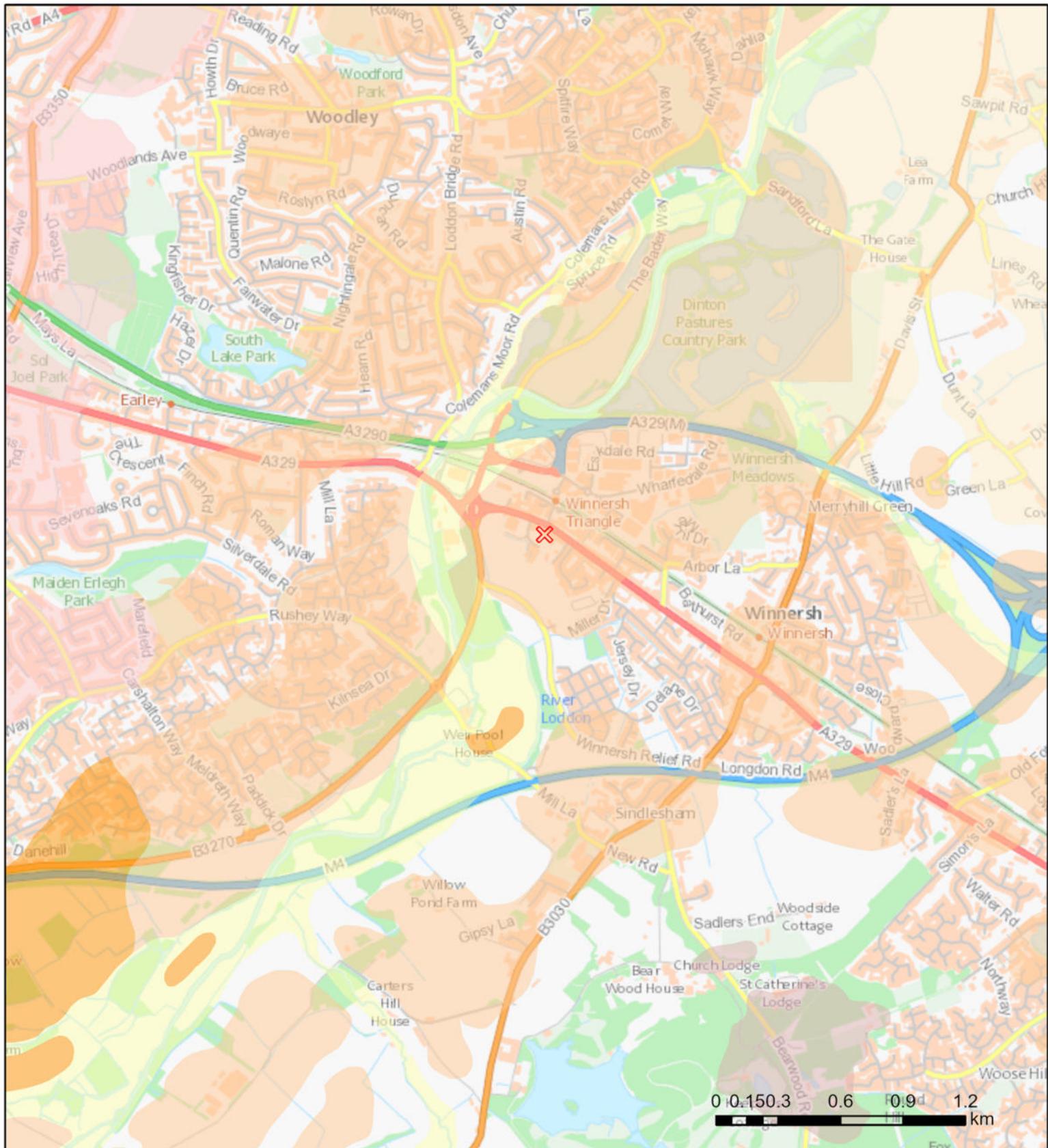
Bedrock geology 1:50,000 scale

-  LONDON CLAY FORMATION - CLAY, SILT AND SAND
-  SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION (UNDIFFERENTIATED) - CHALK
-  CLAYGATE MEMBER - SAND, SILT AND CLAY
-  BAGSHOT FORMATION - SAND
-  LAMBETH GROUP - CLAY, SILT AND SAND

Superficial Deposits



British Geological Survey



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GeolIndex Onshore Data Sources: NERC, Natural England, English Heritage and Ordnance Survey

Map Key

Superficial deposits 1:50,000 scale

	<u>BEENHAM GRANGE GRAVEL MEMBER - SAND AND GRAVEL</u>
	<u>KEMPTON PARK GRAVEL MEMBER - SAND AND GRAVEL</u>
	<u>BOYN HILL GRAVEL MEMBER - SAND AND GRAVEL</u>
	<u>ALLUVIUM - CLAY, SILT, SAND AND GRAVEL</u>
	<u>TAPLOW GRAVEL MEMBER - SAND AND GRAVEL</u>
	<u>HEAD - CLAY, SILT, SAND AND GRAVEL</u>
	<u>HEAD - GRAVEL, SAND, SILT AND CLAY</u>
	<u>RIVER TERRACE DEPOSITS, 1 TO 2 - SAND AND GRAVEL</u>
	<u>RIVER TERRACE DEPOSITS, 1 - SAND AND GRAVEL</u>
	<u>RIVER TERRACE DEPOSITS, 2 - SAND AND GRAVEL</u>
	<u>RIVER TERRACE DEPOSITS, 3 - SAND AND GRAVEL</u>
	<u>RIVER TERRACE DEPOSITS, 4 - SAND AND GRAVEL</u>
	<u>RIVER TERRACE DEPOSITS, 5 - SAND AND GRAVEL</u>
	<u>RIVER TERRACE DEPOSITS, 6 - SAND AND GRAVEL</u>
	<u>RIVER TERRACE DEPOSITS, 7 - SAND AND GRAVEL</u>
	<u>RIVER TERRACE DEPOSITS, 8 - SAND AND GRAVEL</u>
	<u>LYNCH HILL GRAVEL MEMBER - SAND AND GRAVEL</u>
	<u>LANGLEY SILT MEMBER - CLAY AND SILT</u>
	<u>BRICKEARTH - CLAY, SILT AND SAND</u>

Hydrogeology



British Geological Survey



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GeolIndex Onshore Data Sources: NERC, Natural England, English Heritage and Ordnance Survey

Map Key

Hydrogeology 1:625,000 scale

Aquifers with significant intergranular flow

-  Highly productive aquifer
-  Moderately productive aquifer
-  Low productivity aquifer

Aquifers in which flow is virtually all through fractures and other discontinuities

-  Highly productive aquifer
-  Moderately productive aquifer
-  Low productivity aquifer
-  Rocks with essentially no groundwater

APPENDIX D

Flood Mapping

Flood map for planning

Your reference
23-084

Location (easting/northing)
477115/171266

Created
15 July 2025 12:04

Your selected location is in flood zone 2, an area with a medium probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see <https://www.gov.uk/guidance/flood-risk-assessment-standing-advice>)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2025 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

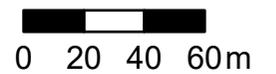
Your reference
23-084

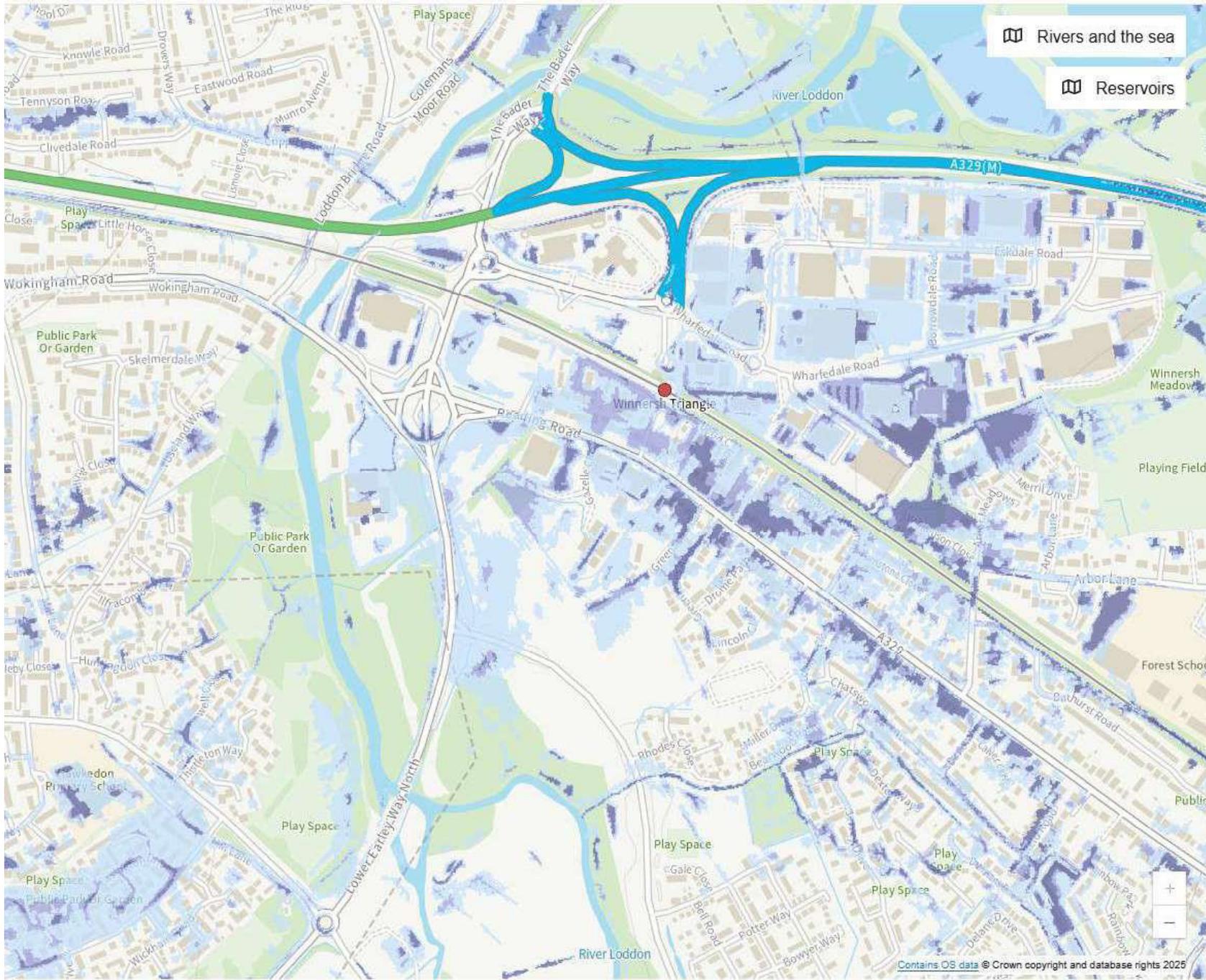
Location (easting/northing)
477115/171266

Scale
1:2,500

Created
15 Jul 2025 12:04

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area





Surface water map

Yearly chance of flooding

- Extent
- Depth

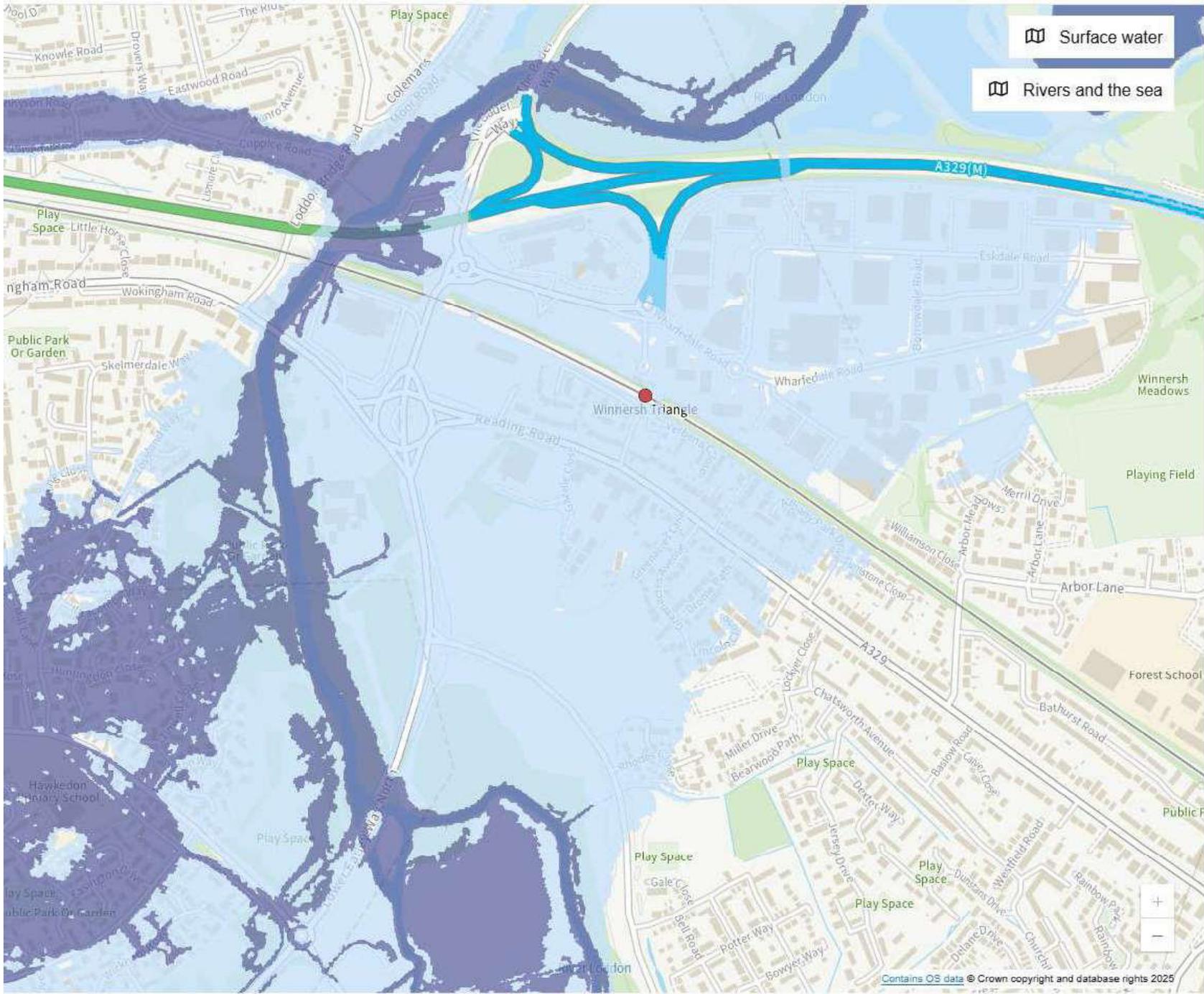
Yearly chance of flooding between 2040 and 2060

- Extent
 - High chance
More than 3.3% chance each year
 - Medium chance
Between 1% and 3.3% chance each year
 - Low chance
Between 0.1% and 1% chance each year

- Depth

Map details

- Show flooding

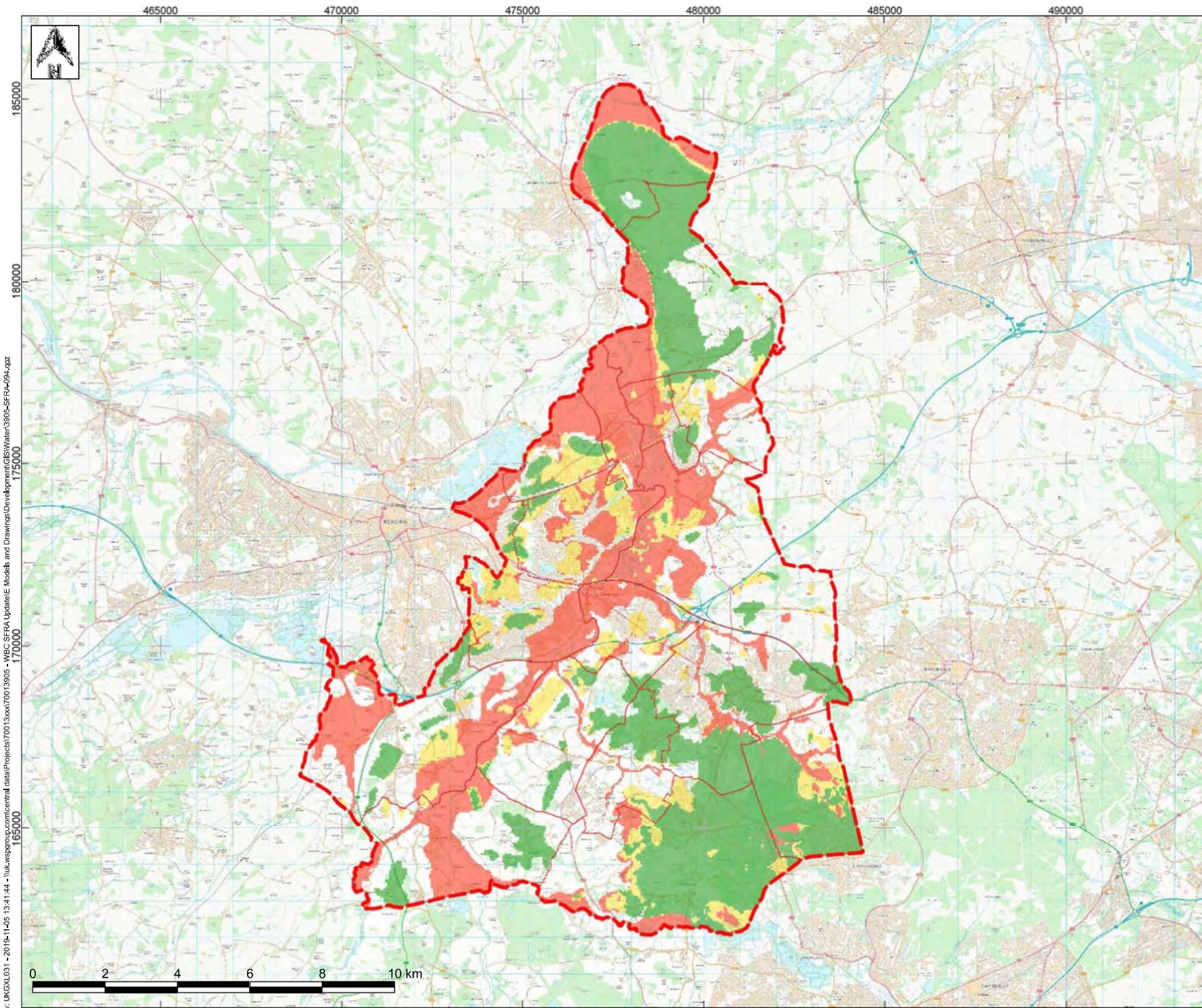


Reservoirs map

- Extent
 - When river levels are normal
 - When there is also flooding from rivers

Map details

- Show flooding



- KEY:**
- Parish Boundaries
 - Wokingham Borough Administrative Boundary
- Groundwater Flood Risk**
- Limited potential for groundwater flooding to occur
 - Potential for groundwater flooding of property situated below ground level
 - Not considered to be prone to groundwater flooding

REV	DATE	DRW	FIRST ISSUE	OB	MQ
A	05/11/19	GL			
			DESCRIPTION	CHK	APP

STATUS: **FOR INFORMATION ONLY**

wsp

Mountbatten House, Basing View,
Basingstoke, HANTS, RG21 4HJ
Tel: +44 (0) 1256 318 800
Fax: +44 (0) 1256 318 70
www.wsp.com

CLIENT: **WOKINGHAM BOROUGH COUNCIL**

ARCHITECT: **-**

PROJECT: **WOKINGHAM BOROUGH COUNCIL
- STRATEGIC FLOOD RISK
ASSESSMENT**

TITLE: **BGS SUSCEPTIBILITY TO
GROUNDWATER FLOODING**

DRAWN: _____ CHECKED: _____ APPROVED: _____

QGIS FILE: 3905-SFRA-094.qgz SCALE @A3: **1:100000** DATE: **05/11/19**

PROJECT No: **70013905** DRAWING No: **3905-SFRA-009(4)** REV: **A**

Created by: UKGXJ031 - 2019-11-05 13:41:44 - \\uk.wspgroup.com\central_data\Projects\70013905 - WBC SFRA Update\E_Models and Drawings\Development\GIS\Water\3905-SFRA-094.qgz

Historic flood data

EIR2025/17722

Our records show that the area of your site has been affected by flooding.
Information on the floods that have affected your site is provided in the table below:

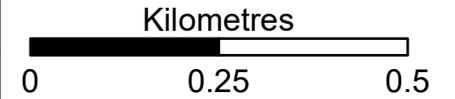
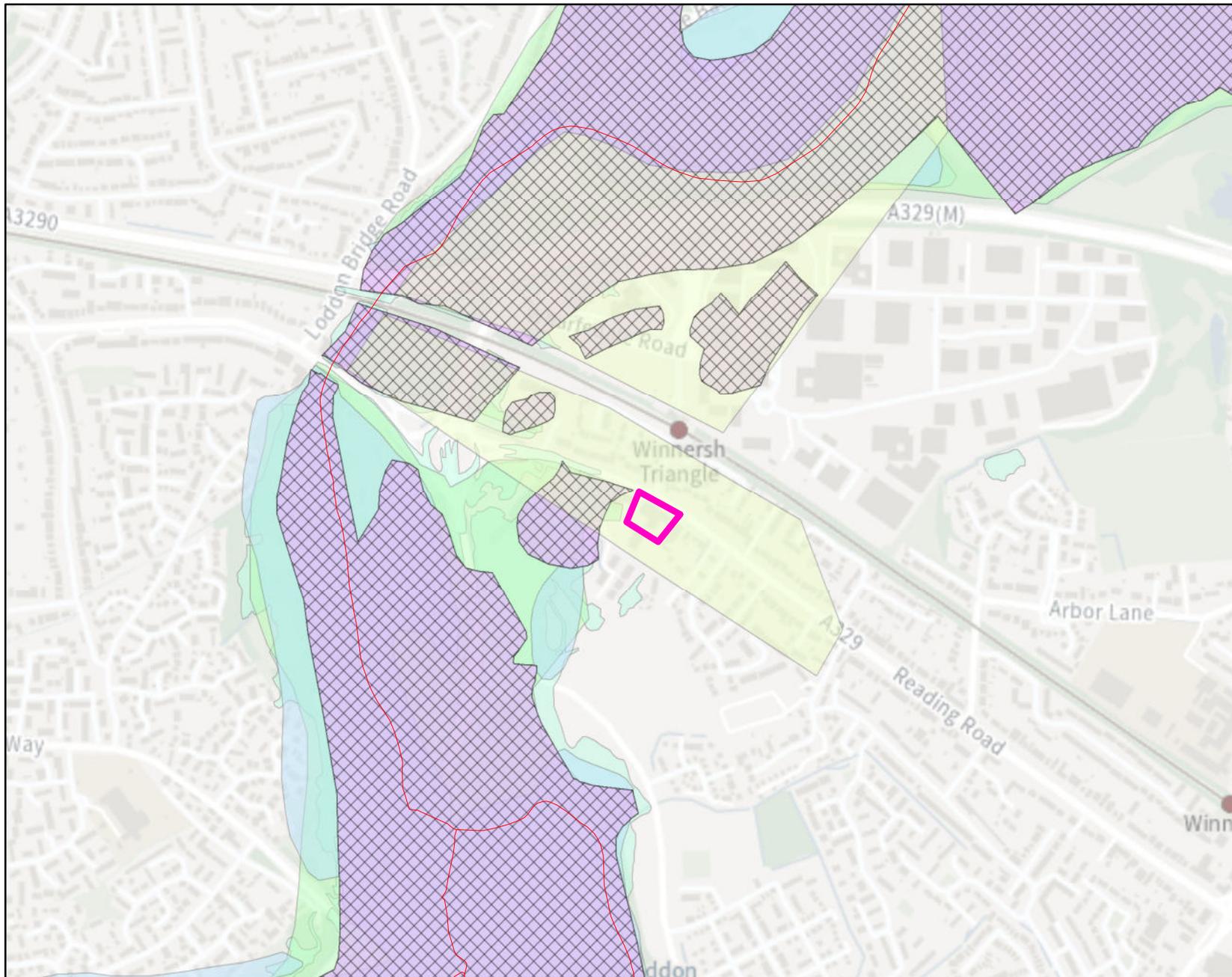
Flood Event Code	Flood Event Name	Start Date	End Date	Source of Flooding	Cause of Flooding
EA0619680900156	06SeptemberAutumn1968	01/01/1968	12/12/1968	main river	channel capacity exceeded (no raised defences)

Please note the Environment Agency maps flooding to land not individual properties. Floodplain extents are an indication of the geographical extent of a historic flood. They do not provide information regarding levels of individual properties, nor do they imply that a property has flooded internally.

Start and End Dates shown above may represent a wider range where the exact dates are not available.

Historic Flood map centred on Mizuno House, Winnersh, RG41 5HE

Created on 24/07/2025 REF: EIR2025/17722

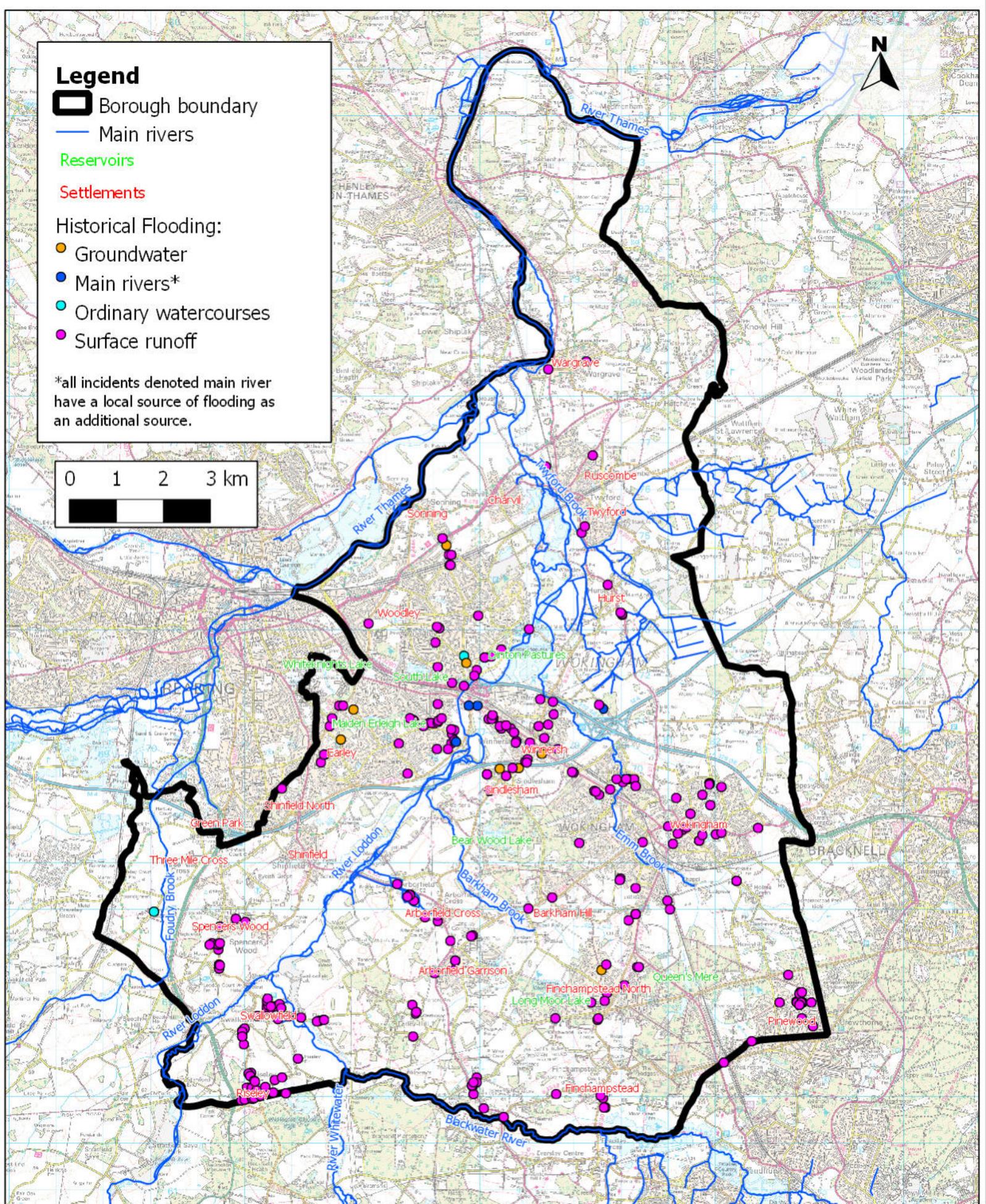


Legend

- Site
- Statutory Main Rivers
- 1947
- 1968
- 1974
- 1981
- 1990
- 1991
- 2007
- 2009

Flooding from rivers or sea without defences (Flood Zone 3) shows the area that could be affected by flooding:
- from the sea with a 1 in 200 or greater chance of happening each year
- or from a river with a 1 in 100 or greater chance of happening each year.

The Extent of an extreme flood (Flood Zone 2) shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.



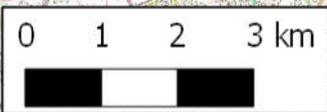
Legend

- Borough boundary
- Main rivers
- Reservoirs
- Settlements

Historical Flooding:

- Groundwater
- Main rivers*
- Ordinary watercourses
- Surface runoff

*all incidents denoted main river have a local source of flooding as an additional source.



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WOKINGHAM
BOROUGH COUNCIL



Wokingham Preliminary Flood Risk Assessment

Figure 5-1: Historical flooding incidents from local sources of flooding	Drawn by: AS	Revision: 3	
	Checked by: BV	Date: 10/06/11	

Wokingham Borough Council
Civic Offices
Shute End
Wokingham RG40 1BN

Halcrow Group Ltd
Griffin House, 135 High Street
Crawley
West Sussex RH10 1DQ
www.halcrow.com

Legend

- Borough boundary
- Parish boundaries

Flooding information from Parishes etc:

- Main River
- Ordinary Watercourse
- Surface Runoff

2007 flooding:

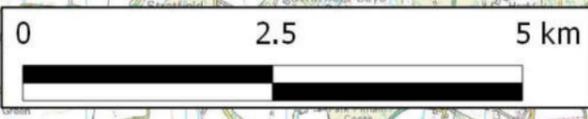
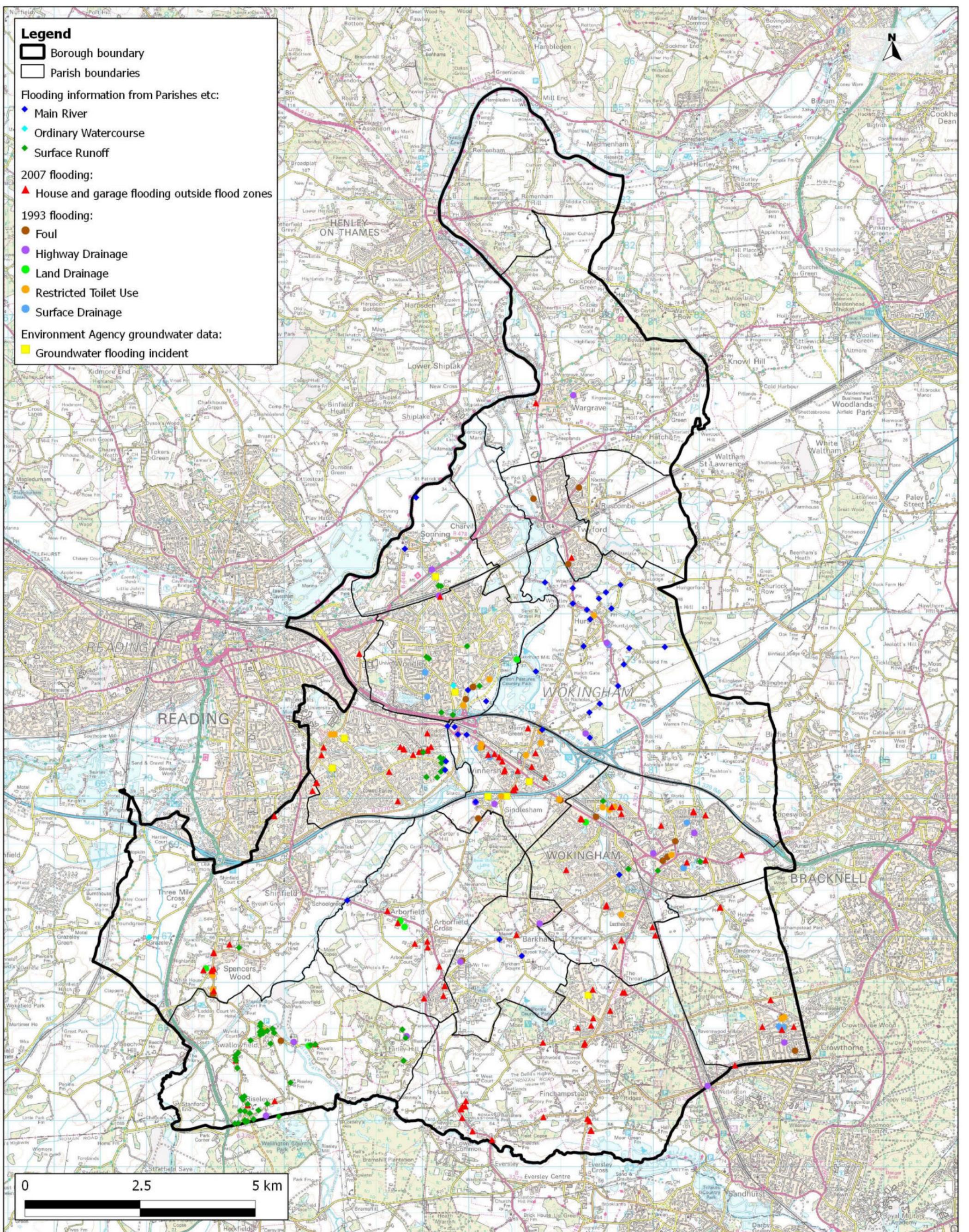
- House and garage flooding outside flood zones

1993 flooding:

- Foul
- Highway Drainage
- Land Drainage
- Restricted Toilet Use
- Surface Drainage

Environment Agency groundwater data:

- Groundwater flooding incident



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Wokingham Strategic Flood Risk Assessment

Map 6b: Overview of Historical Flooding (Data with Spot Locations)

Drawn by: AS
 Checked by: BV
 Revision: 0
 Date: 23/05/11

Wokingham Borough Council
 Civic Offices
 Shute End
 Wokingham RG40 1BN

Halcrow Group Ltd
 Griffin House, 135 High Street
 Crawley
 West Sussex RH10 1DQ
 www.halcrow.com